TO: Docket Management Facility (USCG -2001-10486)
U.S. Dept. of Transportation, room PL-401
400 Seventh Street, S.W.
Washington, DC 20590-0001

FROM: Tandem Technologies
contact: Robert Lyles, President

RE: Standards for Living Organisms in Ship's Ballast Water Discharged in US Waters [33 CFR Part 151]
Request for comments on the development of a ballast water treatment goal, and an interim ballast water treatment standard.
Federal Register, v.67, no.42, March 4, 2002, p.9632-9638

Date: June 1, 2002

Regarding the request for comments on the development of a ballast water treatment goal, and an interim ballast water treatment standard, Tandem Technologies makes the following comments and recommendations:

Q1. The Coast Guard should not adopt any of the three goals listed in the above captioned rulemaking. Rather, the USCG should adopt a goal that adequately reflects the intent of the nation by virtue of the laws passed by Congress in the National Invasive Species Act of 1996 and the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990. We recommend that the USCG consider setting a goal that will:

Eliminate all species within ships' ballast water to a critical level such that they cannot out-compete native species when introduced in a non-native environment.

Q2. The Coast Guard should adopt an interim BWT standard consistent with the following proposed language:

Achieve at least 95%-99% removal, kill or inactivation of a representative set of species from each of six representative taxonomic groups: vertebrates, invertebrates (hard-shelled, soft shelled, soft-bodied), phytoplankton, macro-algae. This level would be measured against ballast water intake for a defined set of standard biological, physical and chemical intake conditions. For each representative species, those conditions are:

The highest expected natural concentration of organisms in the world as derived from available literature, and;

A range of values for salinity, turbidity, temperature, pH, dissolved oxygen, particulate organic matter, and dissolved organic matter.

Enterococci and Escherichia coli will not exceed 35 per 100mL and 126 per 100mL of the treated water, respectively.

To successfully meet the goal stated above, the acceptable kill, removal, and inactivation rates will vary based upon the nature of the species. Those species that have already been found to readily compete outside their native

environment, as well as those with reproductive and feeding characteristics that predispose them to successfully adapt to new environments, will need to be eliminated at the higher 99% level.

Q3. To be considered an effective solution, and thereby an approved ballast treatment system, such technology must maintain the standardized disinfection level throughout the entire residence time in the tanks. There can be no positive determination that the level of treatment required to stop ANS has been achieved if the standard is only measured against the effluent from the technology and not the effluent from the ballast water release. This distinction is paramount to the success of the standards given that the reproduction of a few organisms during a lengthy voyage may raise the population above the critical disinfection level, failing to mitigate and ultimately flawing the intent and success of the standard.

Q5. The above standard and the alternatives proposed by the Coast Guard will impact every company that owns and/or operates vessels. However, we recognize that any negative impact, pales in comparison to the economic, ecological, and public health risks that exist because of invasive species. To limit the impact upon vessel owners and operators, we recommend tax incentives or subsidies for those companies that implement technologies that meet and surpass the standard(s). Such incentives are a modest investment towards the reported $137 billion invasive species cost Americans each year. (Pimmentel, 2000).

Q6. The current impacts to the environment resulting from the unimpeded and/or untreated dispersal of foreign ballast water are well known, widely accepted, and referenced within the notice to which we are replying. The potential impacts of the goal and standard we recommend in this response will successfully mitigate the risk to coastal and inland waterways. Successfully controlling aquatic invasive species will only result from a broad based approach that takes into account each of the representative taxonomic groups at all life stages.

It is short sighted and naive to assume that proposed standards S2 and S4 could successfully achieve any of the three proposed goals. To overlook the devastating effects of the unfettered transfer of bacteria and pathogens would be catastrophic for the environment as well as public faith in the government’s ability to protect them from this ‘side-effect’ of commerce.

Standards S1 and S3 are far superior to the aforementioned two in their attempts to curtail this crisis. These standards better represent the measures necessary to eliminate the ability of invasive species to compete in exotic environments by mitigating the risk across taxonomic groups and encompassing all life stages.